



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,736	04/15/2004	Paul Bruinsma	200309260-1	8822
22879	7590	06/20/2007		
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			EXAMINER MARTIN, LAURA E	
			ART UNIT	PAPER NUMBER
			2853	
			MAIL DATE	DELIVERY MODE
			06/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

717

# Office Action Summary

Application No.

10/825,736

Applicant(s)

BRUINSMA ET AL.

Examiner

Laura E. Martin

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-22 and 24-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-22, and 24-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-7, 9-18, 20-22, 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 5624484) in view of Lin (US 5958121).

#### **Takahashi et al. discloses the following claim limitations:**

As per claims 1 and 16, Takahashi et al. teaches a method and a fluid dispensing system for ink-jet printing, comprising: (a) an ink-jet ink including anionic dye colorant (column 5, lines 18-25), and (b) a fixer composition including a cationic crashing agent that is reactive with a component of the ink-jet ink (column 4, lines 54-61), said fluid dispensing system configured for overprinting (column 14, lines 61-64) or underprinting (column 3, lines 50-61) the fixer composition with respect to the ink-jet ink.

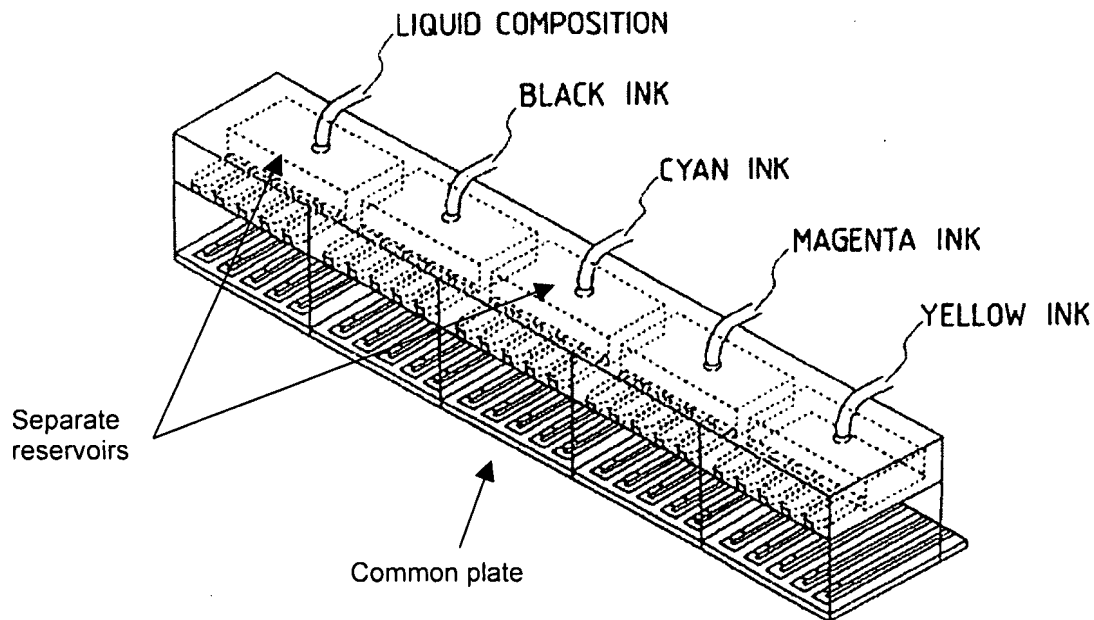
As per claims 2 and 17, Takahashi et al. teaches a method and a fluid dispensing system, wherein the dispensing system further includes ink-jet ink printing nozzles for printing the ink-jet ink and fixer printing nozzles for printing the fixer composition (figure 8; column 12, lines 44-67), and wherein the anionic dispersant is present in the ink-jet ink at an amount that inhibits crashing from occurring at the ink-jet ink printing nozzles (column 5, lines 33-50).

As per claims 3 and 18, Takahashi et al. teaches a method and a fluid dispensing system, wherein the ink-jet printing nozzles and the fixer printing nozzles are present on a common nozzle plate (column 14, lines 55-60).

As per claims 5 and 20, Takahashi et al. teaches a method and a fluid dispensing system, wherein the ink-jet printing nozzles and the fixer printing nozzles are serviced by a common wiper (column 2, line 66- column 3, line 28).

As per claims 6 and 21, Takahashi et al. teaches a method and a fluid dispensing system, wherein the ink-jet ink and the fixer composition are present in two separate ink-jet pens (column 14, lines 22-56).

As per claims 7 and 22, Takahashi et al. teaches a method and a fluid dispensing system, wherein the ink-jet ink and the fixer composition are present in two separate reservoirs of a common ink-jet pen (figure 8, illustrated below).



As per claims 8 and 23, Takahashi et al. teaches a method and a fluid dispensing system, wherein the anionic dye is present in the ink-jet ink at from 0.1 wt % to 6 wt %.  
(column 15, lines 39-57)

As per claims 9 and 24, Takahashi et al. teaches a method and a fluid dispensing system, wherein the cationic crashing agent is present in the fixer composition at from 1 wt % to 5 wt % (column 6, lines 55-60).

As per claim 11 and 26, Takahashi et al. teaches a method and a fluid dispensing system as in claim 1, wherein the anionic dispersant polymer has a weight average molecular weight from 4,000 Mw to 50,000 Mw (column 16, lines 56-60; column 17, lines 42-46).

As per claims 12 and 27, Takahashi et al. teaches a method and a fluid dispensing system, wherein the crashing agent is selected from the group consisting of cationic polymers, multivalent metal ions or ionic groups, acids, and combinations thereof (column 2, lines 53-56).

As per claim 13 and 28, Takahashi et al. teaches a method and a fluid dispensing system, wherein the crashing agent is a cationic polymer selected from the group consisting of polyvinylpyridines, polyalkylaminoethyl acrylates, polyalkylaminoethyl methacrylates, poly(vinyl imidazole), polyethyleneimines, polybiguanides, polyguanides, polyvinylamines, polyallyl amines, polyacrylamines, polyacrylamides, polyquaternary amines, cationic polyurathenes, aminecelluloses, polysacchride amines, and combinations thereof (column 2, lines 53-56).

As per claims 14 and 29, Takahashi et al. teaches a method and a fluid dispensing system, wherein the crashing agent is a multivalent metal ion provided by a member selected from the group consisting of multivalent metal nitrate salts, EDTA salts, phosphonium halide salts, organic acid salts, chloride salts, and combinations thereof (column 5, line 57-column 6, line 9).

As per claims 15 and 30, Takahashi et al. teaches a method and a fluid dispensing system, wherein the crashing agent is an acid selected from the group consisting of succinic acid, glycolic acid, citric acid, nitric acid, hydrochloric acid, phosphoric acid, sulfuric acid, polyacrylic acid, acetic acid, malonic acid, maleic acid, ascorbic acid, glutaric acid, fumaric acid, tartaric acid, lactic acid, nitrous acid, boric

Art Unit: 2853

acid, carbonic acid, carboxylic acids such as formic acid, chloroacetic acid, dichloroacetic acid, trichloroacetic acid, fluoroacetic acid, trimethylacetic acid, methoxyacetic acid, mercaptoacetic acid, propionic acid, butyric acid, valeric acid, caprioc acid, caprylic acid, capric acid, lauric acid, myristic acid, palmitic acid, stearic acid, oleic acid, linolic acid, linoleic acid, cyclohexanecarboxylic acid, phenylacetic acid, benzoic acid, o-toluic acid, m-toluic acid, p-toluic acid, o-chlorobenzoic acid, m-chlorobenzoic acid, p-chlorobenzoic acid, o-bromobenzoic acid, m-bromobenzoic acid, p-bromobenzoic acid, o-nitrobenzoic acid, m-nitrobenzoic acid, p-nitrobenzoic acid, oxalic acid, adipic acid, phthalic acid, isophthalic acid, terephthalic acid, salicylic acid, p-hydrobenzoic acid, anthranilic acid, m-aminobenzoic acid, p-aminobenzoic acid, benzenesulfonic acid, methylbenzenesulfonic acid, ethylbenzenesulfonic acid, dodecylbenzenesulfonic acid, 5-sulfosalicylic acid, 1-sulfonaphthalene, hexanesulfonic acid, octanesulfonic acid, dodecanesulfonic acid, amino acids such as glycine, alanine, valine, .alpha.-aminobutyric acid, .alpha.-aminobutyric acid, .alpha.-alanine, taurine, serine, .alpha.-amino-n-caprioc acid, leucine, norleucine, phenylalanine, and combinations thereof (column 6, lines 10-26).

**Takahashi et al. does not disclose the following claim limitations:**

As per claims 1 and 16: 0.05 wt% to 1.0 wt% of an anionic dispersant polymer.

As per claims 10 and 25: an anionic dispersant polymer is a copolymer that includes both a hydrophobic group and an anionic group.

**Lin discloses the following claim limitations:**

Art Unit: 2853

As per claims 1 and 16: 0.05 wt% to 1.0 wt% of an anionic dispersant polymer (column 2, lines 11-37 and column 18, lines 44-62; in the abstract, Lin teaches an anionic stabilizing agent (dispersant) and an anionic dye, as well as a combination thereof).

As per claims 10 and 25: Lin teaches an anionic dispersant polymer is a copolymer that includes both a hydrophobic group and an anionic group (column 21, lines 11-37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink taught by Takahashi et al. with the disclosure of Lin in order to reduce clogging and increase ink and printed image quality by increasing ink stability.

Claims 4 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 5624484) and Lin (US 5958121), and further in view of Rutland et al. (US 6328413).

**Takahashi et al. as modified discloses the following claim limitations:**

Takahashi et al. teaches the method and fluid dispensing system of claims 2 and 17

**Takahashi et al. as modified discloses the following claim limitations:**

Takahashi et al. as modified does not teach the ink-jet printing nozzles and the fixer printing nozzles are configured in a proximity such that, upon jetting, small amounts of fixer composition aerosol jetted from the fixer printing nozzles contact the



ink-jet ink printing nozzles, thereby resulting in the ink-jet printing nozzles being susceptible to cross-contamination by the fixer composition.

**Rutland discloses the following claim limitations:**

Rutland teaches ink-jet printing nozzles and the fixer printing nozzles are configured in a proximity such that, upon jetting, small amounts of fixer composition aerosol jetted from the fixer printing nozzles contact the ink-jet ink printing nozzles, thereby resulting in the ink-jet printing nozzles being susceptible to cross-contamination by the fixer composition (column 2, line 66- column 3, line 28).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and fluid dispensing system of Takahashi et al. as modified with the disclosure of Rutland et al. in order to allow for covering larger areas of space when printing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and fluid dispensing system of Takahashi et al. with the disclosure of Lin in order to create a stronger ink.

***Response to Arguments***

The applicant and examiner agree that Takahashi does not disclose or suggest 0.5-1.0 wt% of an anionic dispersant polymer. The examiner would like to make note that while Takahashi does not teach an anionic dye colorant in combination with an anionic dye dispersant polymer, Lin is used to modify the Takahashi reference. Lin

Art Unit: 2853

teaches, in the abstract, an ink comprising "anionic dyes ... dyes having physically or chemically associated therewith a stabilizing agent having anionic groups thereon ... and mixtures thereof". It would have been obvious to one of ordinary skill in the art at the time of the invention that the ink taught by Lin could include an anionic dye as well as a stabilizing agent (which includes anionic dispersants) having an anionic group. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink dispensing system taught by Takahashi with the disclosure of Lin because it is well known in the art to use different inks with different formulas in the same printer for economic and image quality reasons. Lin teaches using the anionic dispersant for stabilizing the ink.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Art Unit: 2853

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is (571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura E. Martin

  
6/15/07  
MANISH S. SHAH  
PRIMARY EXAMINER